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Attorneys for Plaintiff/Counterdefendant
 SYNOPSYS, INC.

IN THE UNITED STATES DISTRICT COURT
 NORTHERN DISTRICT OF CALIFORNIA
 SAN FRANCISCO DIVISION

SYNOPSYS, INC.,

Plaintiff,

v.

UBIQUITI NETWORKS, INC., UBIQUITI
 NETWORKS INTERNATIONAL LIMITED,
 CHING-HAN TSAI, and DOES 1-20,
 inclusive,

Defendants.

UBIQUITI NETWORKS, INC.

Counterclaimant,

v.

SYNOPSYS, INC.,

Counterdefendant.

Case No. 3:17-cv-00561-WHO (LB)

**DECLARATION OF DAN ROFFMAN
 RE: SEARCH OF UNALLOCATED
 SPACE ON DEFENDANTS' TAIWAN
 SERVER DEVICES**

1 I, Daniel Roffman, declare as follows:

2 1. I am over the age of 18 and have personal knowledge of the facts stated in this
3 declaration, except as to those facts stated on information and belief, which I believe to be true. I
4 could and would testify competently to the matters stated herein.

5 2. I am a Senior Managing Director at FTI Consulting Technology LLC ("FTI") in
6 the Computer Forensic practice of its Technology Segment. FTI provides forensic investigation
7 and electronic discovery services to assist organizations across a variety of industries better
8 govern, secure, find, and analyze information. I have been employed by FTI since 2006.

9 3. I am an EnCase Certified Examiner with over fourteen (14) years of experience
10 performing forensic technology investigations. In the course of many of these investigations, I
11 have provided oral and written testimony in support of civil and criminal matters in state, federal
12 and international courts. I am a frequent speaker on computer forensic and eDiscovery topics at
13 conferences and continuing legal education classes. I have developed tools and techniques used
14 by FTI's computer forensic experts and have trained FTI's staff on a number of forensic
15 examination techniques. I have also published articles on computer forensic and eDiscovery
16 topics. My full Curriculum Vitae is attached separately to this affidavit as Exhibit A.

17 4. At FTI, I have managed and participated in hundreds of forensic investigations.
18 Prior to my employment with FTI, I was employed by Deloitte in their Analytic and Forensic
19 Technology lab for approximately one year. Prior to that, I was worked for the U.S. Department
20 of Justice ("DOJ") in its Criminal Division, Child Exploitation and Obscenity Section for two
21 years. During my employment at the DOJ, I worked in the High Technology Investigative Unit on
22 investigations into child pornography and obscenity. I also developed a number of software
23 applications used by forensic investigators during my time at the DOJ.

24 **Taiwan Inspection**

25 5. FTI has been retained by Synopsys to provide computer forensic consulting
26 services, including the live inspection of certain of Defendants servers in Taiwan. The Stipulated
27 Forensic Protocol requires that FTI conduct a live inspection using commands built into the
28 servers' operating system, Linux.

1 6. FTI Senior Consultant Mark Austin is currently in Taipei, Taiwan to perform an
2 inspection of Defendants' server devices. Mr. Austin arrived in Taipei last Friday, March 16,
3 2018. Mr. Austin was originally scheduled to return to the United States on Tuesday March 20
4 but has had to extend his stay because he has not been able to complete his work. Since he
5 arrived in Taiwan, I have spoken to Mr. Austin daily regarding his work.

6 7. Forensic examinations of computing devices typically include a search of
7 "unallocated space" on the devices. The Sedona Conference Glossary explains that unallocated
8 space is "[t]he area of computer media, such as a hard drive, that does not contain readily
9 accessible data. Unallocated space is usually the result of a file being deleted. When a file is
10 deleted, it is not actually erased but is simply no longer accessible through normal means. The
11 space that it occupied becomes unallocated space, i.e., space on the drive that can be reused to
12 store new information. Until portions of the unallocated space are used for new data storage, in
13 most instances, the old data remains and can be retrieved using forensic techniques."

14 8. I am informed and believe that FTI's inspection of Defendants' servers in Taiwan
15 has uncovered remnants of Synopsys' software having once existed on the servers. In order to
16 uncover further evidence related to the usage of Synopsys' software, FTI prepared a search of
17 unallocated space on the servers using a GREP command.

18 9. GREP is a common search command used on Linux systems and is listed in the
19 Stipulated Forensic Protocol. GREP commands in Linux can be run so that they output data onto
20 the screen or so that they save the results to a file. Saving the results of the command to a file is
21 the secure, forensically sound way to search unallocated space using a GREP command, because
22 saving the results to a file ensures that the computer does not execute other commands that the
23 GREP search might return if the search is run to output data to the computer screen.

24 10. For a variety of reasons, principally server integrity and security, FTI recommends
25 running the GREP command so that the results are saved to an output file. Defendants refuse to
26 permit FTI to run the GREP command so that the results are saved to an output file. FTI has
27 offered Ubiquiti several solutions or work arounds, some of which are described in more detail
28 below. On the contrary, Defendants have not made their server administrators available to FTI to

1 accomplish any of the solutions presented nor have they offered any other means of saving the
2 results of the search.

3 11. One of the solutions FTI proposed was connecting a flash drive to the server and
4 saving the results of the search to that flash drive. Defendants originally asked FTI to provide
5 brand-new-in-box flash drives to Defendants' expert, Epiq, so that they could connect ("mount")
6 the flash drive to the servers, but they did not do so. FTI is thus unable to connect the flash drives
7 to the servers, apparently because Defendants' servers have a software layer that is preventing the
8 connection. Based on the error messages observed, FTI believes the issue to be related to a
9 software package Defendants installed on their servers called Device Mapper Multipathing.

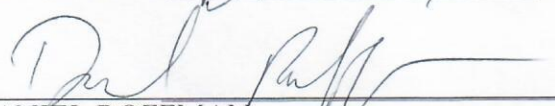
10 12. In lieu of saving the data to a flash drive, FTI also proposed saving the file to
11 another computer or server. FTI can readily write the data to any other computer, server, or
12 shared storage location anywhere on Defendants' network. This is akin to saving a file to a shared
13 network drive in any other business environment and would require minimal coordination with
14 Ubiquiti to link to the temporary network storage location.

15 13. Another alternative is to create a shared folder on the inspection computer and to
16 save the GREP results to the inspection computer. This would likely involve making some
17 configuration changes to the inspection computer to accept file transfers from Defendants'
18 servers.

19 14. Another option would be to purchase a network attached storage device, known as
20 a NAS. NAS devices are storage devices that connect directly to a network as opposed to
21 physically connecting to a server. FTI could provide a brand-new-in-box NAS device to
22 Defendants, and Defendants would simply have to hook up the NAS to their network. Once
23 Defendants' configure the NAS on their network, FTI could run the GREP search and save the
24 results directly over the network to the NAS with minimal coordination from Ubiquiti to link to
25 the temporary network storage location.

26 15. The options above are just a few of the solutions FTI has proposed to Defendants
27 over the past week in an attempt to run the GREP search and save the output file to a secure
28 location.

1 I declare under penalty of perjury under the laws of the United States that the foregoing is
2 true and correct. Executed this 22nd day of March, 2018 at Baltimore, MD

3
4 
5 DANIEL ROFFMAN